REMARKS

This Amendment is responsive to the Office Action dated November 7, 2006. Applicant has canceled claims 13-20, added new claims 21-22, and amended claim 12 for purposes of clarity. Claims 1-12 and 21-22 are now pending.

Election of Species

The Examiner previously advanced an Election of Species Requirement, indicating that FIGS. 2, 6 and 8 illustrate patentably distinct species. In response, Applicant explained that FIG. 2 (claim 1) is generic relative to FIG. 6 (claim 13) and FIG. 8 (claim 18). Applicant agreed with the Examiner that FIG. 6 (claim 13) and FIG. 8 (claim 18) are species of a common genus shown in FIG. 2 (claim 1). On this basis, Applicant elected the genus shown in FIG. 2 (claim 1), and further elected the species shown in FIG. 6 (claim 13) over the species shown in FIG. 8 (claim 18). The Examiner has failed to examine claim 13 and its dependent claims.

In particular the Examiner withdrew claims 13-20 on the basis that (1) the presence of a generic claim is not a basis for obviating an election of species, and (2) the Applicant's disclosure indicates that the structure of FIG. 2 is considered a distinct species. Applicant respectively submits that the Examiner's withdrawal of claim 13 was in error.

Applicant respectively notes that while the presence of a generic claim is not, by itself, a basis for obviating an election of species, the fact that claim 1 is generic relative to claim 13 precludes these claims from being different species of a common genus. The genus is defined by claim 1, and claims 13 and 18 define species of this common genus of claim 1. Claims 1 and 13 must be examined together, consistent with Applicant's election of the genus of FIG. 2 and the species of FIG. 6.

In other words, the Examiner's point that the presence of a generic claim is not a basis for obviating an election of species would apply to a distinction between claims 13 and 18. In this case, the presence of generic claim 1 is not a basis for obviating an election of species between claims 13 and 18. Applicant elected claim 13 over claim 18, however. The fact that claim 1 is generic with respect to claims 13 and 18 precludes the Examiner from ignoring both claims 13 and 18. The Examiner should have examined claim 13 in the previous Office Action.

With respect to the Examiner's second point (that Applicant's disclosure indicates that the structure of FIG. 2 is considered a distinct species), Applicant disagrees, and submits that the Examiner has provided no basis for this assertion. Again, claim 1 defines a genus, claims 13 and 18 are species of the common genus of claim 1. Applicant is entitled to examination of the genus defined in claim 1 and the species of that genus defined in claim 13. Nothing in Applicant's disclosure states that the structure of FIG. 2 is considered a distinct species relative to the structure of FIG. 6.

At this time, Applicant has canceled claims 13-20, but has added new claims 21 and 22. New claim 21 is substantially similar to former independent claim 13, but this new claim is dependent upon claim 1. New claim 22 is substantially similar to former claim 16. The Examiner cannot, as a matter of law, assert that independent claim 1 and dependent claim 21 (which depends upon claim 1) are species of a common genus. On the contrary, claim 1 is clearly generic with respect to claim 21, and there are no other alternative species to claim 21 that are currently pending.

Examination of new claims 21 and 22 is courteously requested.

Nothing in the applied prior art discloses or suggests the system defined by claim 21. In particular, nothing in the applied prior art discloses or suggests a system comprising a first array of write heads arranged in a two-dimensional matrix that define write channels for the system in a first tape direction, a second array of write heads arranged in another two-dimensional matrix, wherein the write heads in the second array of write heads define write channels for the system in a second tape direction, and an array of MR heads positioned between the first and second arrays of write heads, wherein the MR heads define read channels for the system in both the first and second tape directions. For at least this reason, and other reasons, dependent claim 22 should also be allowed.

Claim Rejections Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1-8 and 12 under 35 U.S.C. 103(a) as being unpatentable over Kaaden (US 5,917,671) in view of Nagata (US 5,027,245). In addition, the Examiner rejected claims 9-11 under 35 U.S.C. 103(a) as being unpatentable over Kaaden in view of Nagata and further in view of Nozieres et al. (US 6,650,496).

Applicant respectfully traverses the rejections. Nothing in the applied prior art would have led a person of ordinary skill in the art to modify the system of Kaaden to use an array of MR heads. The system of Kaaden is specifically designed for a magneto-optic head, and Nagata lacks any teaching or suggestion that would have motivated a person of ordinary skill in the art to modify the system of Kaaden to replace the magneto-optic head of Kaaden with MR heads. Indeed, if the system of Kaaden were modified to use MR heads, this would contradict the teaching of Kaaden insofar as the system of Kaaden is specifically designed for a magneto-optic head. Contrary to the Examiner's conclusions, a person of ordinary skill in the art, reading Kaaden, would have consciously avoided the modifications proposed by the Examiner.

Kaaden discloses a system that makes use of a matrix write head 3 that allows for simultaneous recording of a plurality of tracks. See column 1, lines 21-24. Furthermore, as disclosed in Kaaden, the reading of these tracks is done using a reading part 6. See column 1, lines 34-35. The reading part 6 of Kaaden comprises a magneto-optic transducer and a CCD array. See column 1, lines 37-39. During reading, a light beam is modulated depending on magnetization of the tracks, and this modulated light is detected by the CCD-array. See column 1, lines 37-39.

Nagata discloses a magnetic head formed of a combination of two linear arrays of thin film transducer elements. See the Abstract of Nagata. Notably, in Nagata, each of the linear arrays consists of a mixture of write elements and read elements. See the Abstract of Nagata. In the head modules of Nagata, pairs of mutually adjacent read and write transducer elements occur alternatively along each of the different modules. See column 4, line 49-54.

Applicant's pending claims, in contrast to the systems of Kaaden and Nagata, define a system that includes a matrix array of write heads, and a separate array of MR heads. Unlike the system of Kaaden, which uses a magneto-optic transducer for readout, the system of Applicant's claims uses an array of MR heads. This achieves several advantages in terms of readout quality, readout reliability, and ease of manufacture. See Applicant's disclosure, e.g., at paragraph [0010] and paragraph [0036].

A person of ordinary skill in the art would not have been motivated to modify the system of Kaaden to use an array of MR heads. The system of Kaaden is specifically designed for use with a magneto-optic head. Therefore, a person of ordinary skill in the art would not have

eliminated the magneto-optic head, as this would fundamentally change the system of Kaaden in a manner that contradicts the teaching of Kaaden.

Furthermore, even if a person of ordinary skill in the art were to have modified the system of Kaaden to include a module of Nagata, the features of Applicant's claims would not have been achieved. To be sure, the modules of Nagata are not arrays of MR read heads, but comprise pairs of mutually adjacent read and write transducer elements that occur alternatively along the modules. Thus, even if the system of Kaaden were modified to include a module of Nagata (instead of the magneto-optic head of Kaaden), the modified system would still lack an array of MR heads, wherein each of the MR heads defines a read channel for the system. Instead, the modified system would comprise a matrix array of write heads (per Kaaden), and a module that includes pairs of mutually adjacent read and write transducer elements (per Nagata).

Put another way, the pairs of mutually adjacent read and write transducer elements (per Nagata) are different from an array of MR heads (as required by Applicant's claims), wherein each of the MR heads defines a read channel for the system. Dependent claim 3 further distinguishes any Kaaden-Nagata combination for similar reasons. In particular, dependent claim 3 requires each of the write heads to be substantially aligned with a corresponding one of the read heads such that each of the write channels substantially aligns with a corresponding one of the read channels. A module that includes pairs of mutually adjacent read and write transducer elements (per Nagata) could not achieve this feature, even if the module of Nagata were combined with the matrix array of Kaaden.

Furthermore, the arrays of mutually adjacent read and write transducer elements (per Nagata) would not even make sense in a system of Kaaden, which uses a matrix array of write heads. In particular, the arrays of mutually adjacent read and write transducer elements (per Nagata) are specifically designed for use with a complementary read-write module that includes arrays of mutually adjacent read and write transducer elements. In Nagata, two different modules each include both read and write elements, and the write elements of one module align with read elements of the other module. Applicant's claims, in contrast, require an array of write elements, and a distinct array of read elements. According to Applicant's claims, the write elements of the write array define the write channels, and the read elements of the read array define the read channels. Arrays of mutually adjacent read and write transducer elements (per Nagata) are

different from distinct arrays of write elements and read elements, as defined by Applicant's claims.

In the Office Action, the Examiner stated that:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize MR type heads for the read heads in Kaaden et al. The motivation is as follows: these are commonly used as read heads. See Office Action page 3, lines 11-13.

This statement by the Examiner is conclusory, and provides no insight as to why a person of ordinary skill in the art would have been motivated to use an array of MR heads with a matrix array of write heads, as required by Applicant's claims. Even if MR heads are commonly used as read heads, as argued by the Examiner, this fact lends no specific insight as to why a person of ordinary skill in the art would have been motivated to change the system of Kaaden, and replace the magneto-optic head of Kaaden with an array of MR heads that define read channels. Furthermore, the Examiner has failed to even address the fact that the modules of Nagata are different from the features of Applicant's claims insofar as the modules of Nagata include both read and write transducer elements that are designed to work in a complementary fashion with another module that includes pairs of read and write transducer elements.

Applicant also challenges the Examiner's unsupported assertions that the quantified channel separations recited in claims 4-6 would have been an obvious result of routine experimentation. This conclusion is clearly unsupported by any evidence, and is nothing more than the Examiner's assertion that these results could be achieved via routine experimentation.

The Federal Circuit has stated: "[the] factual question of motivation is material to patentability, and (can) not be resolved on subjective belief and unknown authority.[1] This finding must be based upon substantial evidence, and not subjective musings or conjecture by the Examiner.[2] Deficiencies in the evidentiary record cannot be cured by general conclusions such as "general knowledge" or "common sense."[3] Accordingly, the Examiner cannot rely on unsupported, conclusory statements to close holes in the evidentiary record.[4] Unless the Examiner can establish an evidentiary record based on concrete prior art references that establish

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[1] *Id.* at 1434.
[2] *Id.*
[3] *Id.*
[4] *Id.*

that it would have been obvious to a person with ordinary skill in the art to achieve the quantified channel separations recited in claims 4-6, these claims should be allowed.

In view of the comments above, all claims in this application are in condition for allowance. Applicant respectfully requests reconsideration of claims 1-12 and consideration of new claims 21 and 22. Applicant respectfully solicits prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 09-0069. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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